

REMARKS

By this amendment, claims 1-14 are pending, in which claims 1, 2, 8 and 9 are currently amended. No new matter is introduced.

The Office Action mailed January 4, 2007 rejected claims 1 and 5 under 35 U.S.C. § 103(a) as obvious based on *Ottosson et al.* (US 6,480,558 B1) in view of *Chintawongvanich* (US 6,427,531 B1), and claims 1, 2, 8 and 9 under 35 U.S.C. § 112, second paragraph, as lacking sufficient antecedent basis. Further, claims 1, 2, 8, and 9 were objected to for various informalities.

Applicants appreciate the indication that claims 2-4, 6-8, 10, 12, and 14 would be allowable if amended to overcome the corresponding 35 U.S.C. § 112, second paragraph, rejections and/or recast in independent form.

In response to the rejection under 35 U.S.C. § 112, second paragraph, claims 1, 2, 8 and 9 have been amended to correct the noted and discovered informalities and the rejection under 35 U.S.C. § 112, second paragraph, is believed to have been overcome, and no further rejection on that basis is anticipated. If, however, the Examiner disagrees, the Examiner is invited to telephone the undersigned who will be happy to work with the Examiner in a joint effort to derive mutually satisfactory claim language.

As for the obviousness rejection, Applicants respectfully traverse, as *Ottosson et al.* and *Chintawongvanich*, alone or in combination, fail to disclose all features of the claims. For example, claim 1 recites, “correlating the total signal consisting of the transmitted pilot sequence and transmitted data sequences with a reference pilot sequence; **subtracting the correlation result time-delayed by one or more symbol durations of the pilot sequence** from the current correlation result.”

The Examiner equates the reference pilot signal of the Applicants to the synchronization signal of *Ottosson et al.* Col. 9: 5-25 by *Ottosson et al.* states:

A component corresponding to a correlation of an estimate of a received, known synchronization signal is then subtracted from the synchronization detection signal produced by the correlator 405, and fed into an accumulator 410. **The subtracted component may be generated by correlating the common synchronization code with an estimated received known synchronization signal generated by a received synchronization signal estimator 430 in a second correlator 435.** The received known synchronization signal estimator 430 and the correlator 435 preferably produce a correlation that approximates the result of correlating a known synchronization signal produced by a previously identified cell as received at the terminal with the common synchronization code. For example, the estimate of the known signal may be constructed using a channel estimate 402 for a channel over which the known synchronization sequence is communicated. It will be appreciated that knowledge of characteristics of a known synchronization signal other than a channel estimate may be used as well, such as knowledge of signal strength, path loss, and coding applied to the known synchronization signal.

It is clear from the above passage that the signal that is subtracted from the result of the correlation between the received signal and common synchronization code is generated by correlating the common synchronization code with an estimated received known synchronization signal generated by a received synchronization signal estimator using a separate correlator circuit. FIG. 4 illustrates this concept. The first correlator that correlates the received signal with the known synchronization signal is 405. The second correlator, which correlates the common synchronization code with an estimated received known synchronization signal generated by a received synchronization signal estimator is 435. The output of correlator 435 is then fed to a circuit to be subtracted from the output of correlator 405. It can be readily observed that the signal to be subtracted is generated **based on the output of the received synchronization signal estimator and the correlator 405.** By contrast, claim 1 recites “**subtracting the correlation result time-delayed by one or more symbol durations of the pilot sequence** from the current correlation result.” In essence, the *Ottosson et al.* system

subtracts a portion of a known synchronization signal from the detection signal, and therefore, does not subtract “the correlation result time-delayed . . . from the current correlation result.” Moreover, the subtraction of the signal by *Ottosson et al.* is implemented to cancel the interference (the source of the interference is due to, e.g., multipath components as well as transmissions from multiple base stations) and not to suppress the synchronization signal (which the Examiner equates to the claimed pilot signal).

Ottosson et al.’s suppression mechanism requires estimation of the pilot sequence first, thereby requiring detection of the maximum correlation result between the received signal and the reference pilot. This operation is in stark contrast to the claimed invention, as to negate the claimed invention altogether.

In addition, *Chintawongvanich* does not cure the deficiencies of *Ottosson et al.* as the *Chintawongvanich* reference is merely relied on for supposedly teaching “incoherent averaging and determining the minimum,” (see Office Action, page 4). Additionally, Applicants respectfully disagree with this assertion. Although *Chintawongvanich* discloses incoherent averaging, it does not disclose detecting the minimum of anything. That is, *Chintawongvanich* uses the term “minimum” within the context of the minimum number of spectra and the minimum number of pulse repetition periods (see e.g., col. 3: 2-13).

Furthermore, *Chintawongvanich* cannot be properly combined with the primary reference, *Ottosson et al.*, because both the primary and secondary references must be analogous arts. Pursuant to MPEP §2141.01(a), the Examiner must determine what is “analogous prior art” for the purpose of analyzing obviousness. In order to rely on a reference as a basis for rejection of an applicant’s invention, the reference must either be in the field of applicant’s endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned.” *In re Oetiker*, 977 F.2d 1443, 1446, 24 USPQ2d 1443, 1445 (Fed.

Cir. 1992). See also *In re Deminski*, 796 F.2d 436, 230 USPQ 313 (Fed. Cir. 1986); *In re Clay*, 966 F.2d 656, 659, 23 USPQ2d 1058, 1060-61 (Fed. Cir. 1992); and *Wang Laboratories Inc. v. Toshiba Corp.*, 993 F.2d 858, 26 USPQ2d 1767 (Fed. Cir. 1993). In this regard, *Chintawongvanich* teaches a “hyper-sound detection and ranging system for remote wind measurements that provides all three orthogonal components of a three dimensional wind field on a signal transmission pulse utilizing simultaneous beams of acoustic waves,” (Abstract). The *Chintawongvanich* reference relates to an acoustic phased array system for measuring atmospheric wind and is not related to any such communication system based on CDMA. As such, *Chintawongvanich* has no relevance to CDMA-signal synchronization timing.

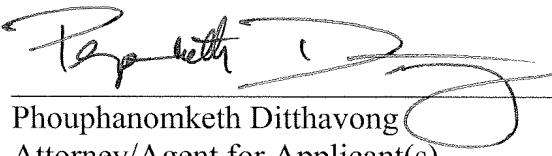
In view of the foregoing, Applicants respectfully urge the withdrawal of the obviousness rejection.

Therefore, the present application, as amended, overcomes the objections and rejections of record and is in condition for allowance. Favorable consideration is respectfully requested. If any unresolved issues remain, it is respectfully requested that the Examiner telephone the undersigned attorney at (703) 519-9952 so that such issues may be resolved as expeditiously as possible.

Respectfully Submitted,

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Date


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